

2021

## Psychoeducation Intervention for Stress Management in Adolescents

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Okoeka, Gold E., "Psychoeducation Intervention for Stress Management in Adolescents" (2021). *Doctor of Nursing Practice (DNP) Projects*. 266.

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Psychoeducation Intervention for Stress Management in Adolescents

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Date of submission: 04/20/2021

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### Acknowledgements

Firstly, I would like to thank God for getting me this far in my educational journey. I would also like to thank my advisor and project Chair Dr. Tandukar for the support and guidance throughout this project. I am really grateful and cannot say this enough. I would also like to thank my parents and siblings for being here throughout my life journey, and always supporting me constantly. Lastly, I would like to thank my Partner, Olamide, who has been very supportive and never fails to show me love; thank you for your constant words of encouragement. I could never have gotten here without you all.

## Abstract

*Background:* Stress reduction techniques (SRT) such as yoga, exercise, deep breathing, positive self-talk, sleep hygiene among others, have shown to be effective in stress reduction in adolescents. SRTs are effective in lowering stress levels, improving mood, reducing anxiety levels as well as promoting overall health. *Purpose:* This DNP project aimed to implement a psychoeducation intervention using e-brochures to reduce stress levels among adolescent's ages 16-18 years old. *Methods:* A total of 15 adolescents who agreed to participate in the program received a psychoeducation intervention using e-brochures on the impact of stress on their mental health and a few SRTs including deep breathing, exercise, positive self-talk, and sleep hygiene, to practice daily for 4 weeks. The 40-minute one-time psychoeducation session was provided to 15 adolescents via zoom due to social distancing measures, educating them of the negative impacts of stress on their overall health and the different SRT types that they can implement daily for 4 weeks for reducing stress. Quantitative data were collected pre & post-intervention using the perceived stress scale (PSS). Qualitative data were also collected post-intervention using participants' responses to program usefulness to reduce their stress levels. *Results:* Results showed all 15 participants had an improvement in post-intervention scores (Mean= 15.46, SD= 4.22) when compared to pre-intervention scores (Mean= 27.93, SD= 5.90). Qualitative data showed 14 out of 15 participants self-reported they found the intervention helpful for stress control. One participant reported uncertainty in program's usefulness. *Implications/Conclusion:* Daily use of SRT lowers stress levels in adolescents ages 16-18 years old.

**Keywords:** Stress reduction techniques, stress in students, stress management interventions, stress in adolescents and stress management education.

## Psychoeducation Intervention for Stress Management in Adolescents

### Introduction

Adolescents ages 13-18 self-reported stress levels higher than adults (5.8 vs. 5.1 on a 10-point scale) and reported feelings of sadness (30%), fatigue (36%), missed meals (23%) and feeling completely overwhelmed (31%) as a result of their stress (APA, 2014). Adolescence is a heightened stress period, which is a risk factor for many psychological and physical conditions (Zeng et al, 2019). Adolescents are at increased risk for undermanaged stress (Bistricky et al., 2018) and most adolescents are unaware of the multiple stress reduction techniques (SRT) available for stress reduction like deep breathing, sleep hygiene, exercise, muscle relaxation and others.

### Background

Adolescents are at a high risk for the negative impacts of stress as they develop a sense of self and are transitioning from teenager to adult (Suldu et al., 2009). Depending on the specific age group commonly faced stressors include but are not limited to friendships, relationships, bullying, assault or sexual harassment, peer pressure, possible relocation from home/ supportive environment, problems with time management, schoolwork and pressure to be academically successful (Bistricky et al., 2018; Delgado et al., 2018). Excess stress can manifest as psychiatric symptoms like anxiety, trouble concentrating, behavioral problems, sadness/depression, and sleep disturbances but in some cases, individuals may experience medical symptoms from undermanaged stress like headache, high blood pressure, stomachaches, and chest pain (Burkhart et al., 2018; Nagele et al., 2014). The American Association of Pediatrics (AAP) (2014) recommends that anticipatory guidance for adolescents should include stress management strategies due to the increased risk of stress in this age group.

**Problem Statement**

The risk of multiple psychiatric conditions among adolescents ages 16-18 years old in the United States is indicated by adverse health outcomes and results primarily from the stress that is associated with being an adolescent. Stress is a modifiable risk factor for multiple psychiatric conditions, and can manifest as sadness, anxiety, trouble focusing, sleep problems and behavioral disturbance. Stress has also been shown to manifest as medical symptoms like headaches, hypertension, stomachache, and chest pain (Burkhart et al., 2018; Nagele et al., 2014). This DNP project directly addressed the problem of ‘stress’ by educating adolescents on the body’s stress response and the various SRT that can be incorporated into their daily lives to reduce stress, especially now during a pandemic when stress levels are at an all-time high.

**Organizational “Gap” Analysis of Project Site**

This project was implemented via telemedicine due to the COVID 19 pandemic, which had been a significant barrier to implementing this project as initially planned in a psychiatric outpatient clinic in Cranston, Rhode Island (RI). The city has a shortage of psychiatric providers, and there has been a high demand for services in recent months secondary to increased stress caused by the pandemic.

Adolescents are a high-risk population subject to stress that can lead to sadness, anxiety, sleep disturbance, tantrums, school failures, and suicide (AAP., 2014). Due to the shortage of providers in the city, adolescents are left to the impacts of undermanaged stress especially now and will benefit from a stress-management intervention. The project clinic is a major center for mental health care in the city, and the implementation of this project via telemedicine allowed for the education of many adolescents, increased their understanding and future recognition of symptoms of stress in themselves and their friends as well as promoting a more adaptive attitude



toward stress.

### **Review of the Literature**

A review of the literature was conducted in the following databases: PsychINFO, CINAHL, PubMed and Google scholar, using key terms ‘stress reduction techniques’, ‘stress management’, ‘stress management intervention’ and ‘stress management education’ ‘stress in adolescence’. The evidence used was limited to peer- reviewed, full-text research studies published in English between 2015-2019. The target population was initially adolescents; however, this was broadened to include research studies done on young adults/ college students due to extensive evidence available supporting stress management benefits in young adults. The initial search yielded 71 articles but was narrowed down using specific inclusion and exclusion criteria.

Inclusion criteria include articles on the specific population: adolescents and young adults, studies that were considered recent (published within the last five years), studies that showed the efficacy of a select SRT. Exclusion criteria include studies on individuals with co-morbid chronic medical conditions. Five research studies are included in the literature review as shown in Appendix C, however four other relevant articles are referenced and used for obtaining facts on clinical issues and problems discussed. The Melnyk’s rating system (Appendix D) was used in determining the strength/quality of the evidence as shown in Appendix C (Melnik et al., 2015).

The findings from the evidence reviewed as shown in appendix C are positive and reveals that adolescents and college-aged adults can greatly benefit from various SRT (Bistricky et al., 2018; Burkhart et al., 2018; Delgado et al., 2018; Ratanasiripong et al., 2015; Vohra et al., 2019). The various SRT studied in the evidence are mindfulness-based stress reduction (MBSR),

animal-assisted therapy, deep breathing, yoga, progressive muscle relaxation (PMR), physical exercise, positive self-talk, biofeedback and mindfulness. In the research study by Burkhart et al., 2018, a psychoeducation program teaching different individuals all the various SRT that can be implemented daily was effective in reducing their stress levels.

In the research study by Burkhart, et al., 2018, a one-time psychoeducation intervention targeting students ages 11-21 on the effects of stress on the body, physiological stress response and the positive effects of different SRT like deep breathing, exercise, muscle relaxation and exercise incorporated into daily living was shown to be an effective method of stress reduction in study participants who reported that they found the intervention to be helpful and that they felt more relaxed after implementing this into their daily lives. Results at one-week follow-up showed that 86% of participants report that they significantly benefitted and easily incorporated these SRT into their daily lives (Burkhart et al., 2018).

The various SRT that is shown to be effective in lowering stress levels are mindfulness-based stress reduction (MBSR), meditation, yoga, deep breathing, exercise, sleep hygiene, positive self-talk and progressive muscle relaxation (PMR). These SRTs have shown to be effective in reducing anxiety, depression and perceived stress levels in the adolescent population (Vohra et al., 2019), college students (Bistricky et al., 2018), and also shown to have preventative and therapeutic effects. There is evidence that supports the use of animal-assisted therapy/ pet therapy in improving mood, reducing stress and promoting overall mental health in college aged students (Delgado et al., 2018). Lastly, meditation and biofeedback are effective ways of decreasing anxiety and stress levels (Burkhart et al., 2018).

All the above studies have one thing in common; they support and encourage the use of SRT for stress management. The studies reviewed show that SRTs are beneficial, and effective

in stress reduction, promoting resiliency, mood improvement, and reducing adolescents' anxiety levels. In one of the studies (Delgado et al., 2018), a 15 min play therapy with a pet daily significantly helped reduce stress by decreasing BP readings and cortisol levels. These findings are encouraging and were used as guidance in the planning and implementation of the DNP project, the project implemented a psychoeducation targeted to adolescents ages 16-18 years old in an outpatient psychiatric practice via telemedicine. Of all the different SRT mentioned, a select few, including deep breathing, muscle relaxation, exercise, animal therapy, positive self-talk and sleep hygiene were taught to adolescents using an educational e-brochure for daily implementation and incorporating into their daily lives for long-term stress control.

SRT can be safely used to reduce stress levels in adolescents according to the review of the literature. The evidence-based practice intervention implemented is a psychoeducational program targeted to adolescents ages 16-18, via telemedicine using e-brochures on stress and different SRT for stress control. Participants incorporated the taught SRT into their daily lives for stress control.

### **Theoretical Framework**

The theory 'Lazarus and Folkman's Psychological Stress and Coping theory' was used to guide this project. This theory is the cornerstone for multiple studies done on stress, stress response and coping mechanisms (Briggs et al., 2017). This theory identifies two major concepts; a person's perception/ cognitive appraisal of stress factors and different coping mechanisms adopted to deal with stress (Briggs et al., 2017). Cognitive appraisal is what a person perceives as 'stressful' and can vary from person to person. Coping actions attempt to reduce or change the stress factor (Krohne., 2002). Strategies that can be useful in stress reduction include distracting oneself, relaxation, SRT and releasing negative emotions (Biggs et

al., 2017). Appendix A is a visual display of this theory, showing that stress is a response from perceived stressors from both internal and external demands and in response to stress, we adapt coping strategies to deal with stress for stability, relaxation and physical/mental wellness.

### **Goals, Objectives and Expected Outcomes**

The goal of this project was to teach SRTs to adolescents ages 16-18 for stress control. This DNP quality improvement project's objective was to implement a psychoeducation intervention using e-brochures for adolescents age 16-18 years old to help them improve their knowledge and skills on management of stress using SRT. The contents of the educational brochures were 1) the impacts of under-managed stress on their mental health 2) specific SRTs for incorporation into their daily lives including deep breathing, muscle relaxation, exercise, animal therapy, positive self-talk and sleep hygiene. This project's expected outcome was a reduction in stress levels evident by lower PSS scores post intervention when compared to pre-intervention scores.

## **Methods**

### **Project Design**

Adolescents who presented via telemedicine for a psychiatric visit were asked for their willingness to participate in a quality improvement/ research translation project. The DNP student implemented a one-time 40-minute psychoeducation session to 15 adolescents using zoom. Adolescents were interviewed before and four weeks after the program to measure their stress levels using PSS questionnaires and responses of program usefulness in stress reduction.

The project's setting was online, through a psychiatric outpatient clinic located in Rhode Island via telemedicine. Due to the COVID 19 pandemic restrictions, the practice is currently closed but continues to provide services via telemedicine. This practice strictly provided

outpatient psychiatric services including psychotherapy and medication management services to the lifespan population. This project's inclusion criterion was adolescents between specific ages 16-18 years old who visited the clinic via telemedicine. The only exclusion criterion was being outside of the desired age group.

The capstone project began with creating an electronic educational brochure on the impacts of stress and various SRT that can be implemented daily, including deep breathing, muscle relaxation, exercise, animal therapy, positive self-talk and sleep hygiene. When an adolescent age 16-18 presented for a psychiatric visit via telemedicine, they were asked about willingness to participate in a psychoeducational intervention program. A total of 15 adolescents were recruited: 9 females and 6 males. The program was a one-time 40- minute psychoeducation session that taught these 15 adolescents the negative impacts of stress on their mental health and specific SRTs including deep breathing, muscle relaxation, exercise, animal therapy, positive self-talk and sleep hygiene to incorporate into their daily lives for stress reduction. This psychoeducation session was performed via zoom and surveys/ questionnaires were sent using DocuSign. Adolescents were interviewed before and 4 weeks after the program to measure their stress levels using PSS questionnaires and responses of program usefulness in stress reduction.

After completing the psychoeducation program adolescents were requested to continue daily use SRT for at least 60 minutes and to follow up in four weeks. Participants received routine reminder phone calls to check in weekly during the intervention phase. Pre and post PSS scores are noted in Appendix J and are currently being analyzed for outcomes.

### **Measurement Instruments**

The perceived stress scale (PSS) by Sheldon Cohen in appendix H (Cohen et al, 1994) is used to test the perception of stress by individuals and measure the degree to which events are

considered stressful to a person within a duration of 1 month. High PSS scores have been associated with greater stress levels and greater vulnerability to stressful life events (Cohen et al, 1994). Also qualitative data was obtained using responses of program usefulness to reduce their stress levels.

### **Data Collection Procedures**

Adolescents ages 16-18 years old were asked about their willingness to participate in a psychoeducational intervention program. Those who agreed to participate were asked to complete the PSS scale and provide qualitative information about current stress levels and current practices to decrease stress.

The intervention was a one-time 40- minute comprehensive psychoeducation session that taught 15 adolescents the negative impacts of stress on their mental health and specific SRTs to implement daily. The psychoeducation session was performed via zoom and e-brochures were emailed 24 hours before the session with a zoom link. Post-intervention, adolescents were requested to continue daily use of SRT for at least 60 minutes and follow up in 4 weeks. Participants were also encouraged through weekly phone calls to continue to incorporate these interventions into their daily lives. PSS was administered post-intervention to measure outcomes. Qualitative data was also obtained to determine if day-to-day implementation of SRT was beneficial to reducing stress levels in adolescents.

### **Data Analysis**

Quantitative data were obtained and inputted into a Microsoft excel worksheet. The quantitative data were analyzed using mean, and standard deviation. Paired t-test was used to compare pre- and post-intervention PSS scores. Furthermore, qualitative data were obtained

post-intervention on participants self-reports of program's usefulness and if they found the SRTs to be beneficial overall.

### **Timeline**

This DNP project was completed in 8-9 weeks. Timeframe for approval of the proposal was one week. After proposal approval, the next 2 weeks were used to recruit 15 willing participants for the project and completion of PSS scales. PSS scores were sent out after recruitment for completion using DocuSign then the one-time 40-minute psychoeducation program took place via zoom. Participants were then asked to implement SRTs 60 minutes daily over four weeks. Post-intervention, adolescents completed PSS scales and provided qualitative data on program's usefulness. Data collection and analysis took two weeks.

### **Ethical Considerations/Protection of Human Subjects**

The University of Massachusetts, Amherst (UMass) Internal Review Board (IRB) application was not required since the project did not meet the definition of human subject research under federal law (Appendix F). All participants were protected by the Health Insurance Portability and Accountability Act of 1996 (HIPAA) which, among other guarantees, protects the privacy of patients' health information (Modifications to the HIPAA Privacy, Security, Enforcement, and Breach Notification Rules, 2013). Additionally, the DNP student and practice personnel who conducted this project followed the Standards of Care for practice in a psychiatric outpatient office. All information that was collected, as part of evaluating the impact of this project was aggregated data from the project participants and did not include any potential patient identifiers. Instead of using identifiers, coding was used to identify adolescents for example participant A, participant B, participant C, format to identify and track pre & post-intervention data. All electronic files containing identifiable information are password protected

to prevent unauthorized users' access, and only the project coordinators had access to the passwords.

### Results

Fifteen participants ages 16-18 y/o were recruited for the study, 9 (60%) females and 6 (40%) males with an average age of 17.1 as noted below (Table 1). The self-identified race was also obtained. There were 12 Caucasian participants (80%), 2 African American participants (13.33%) and 1 Hispanic participant (6.67%).

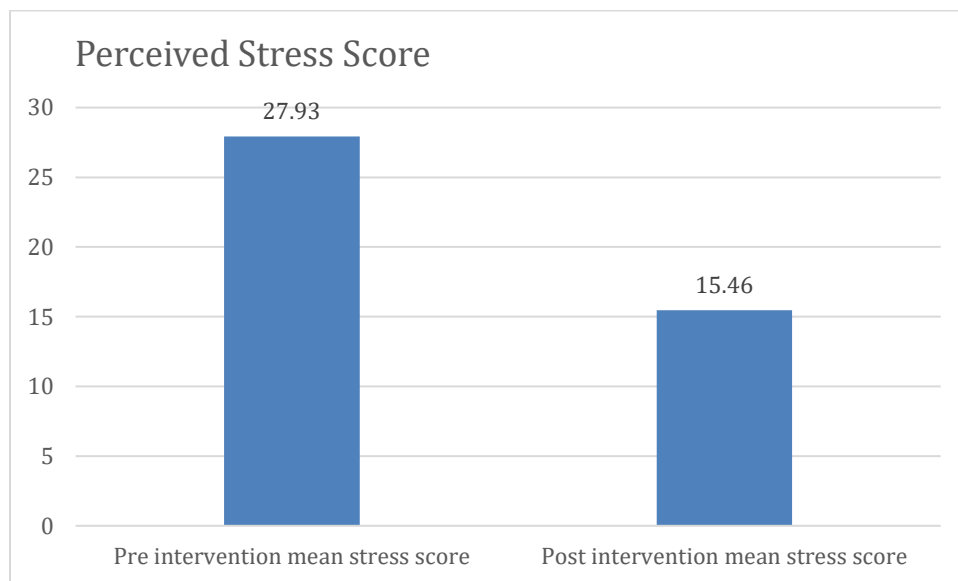
***Table 1 Characteristics and perceived stress score of participants (n= 15)***

PARTICIPANTS	AGE / GENDER	PRETEST SCORES	POST- TEST SCORES	Race/ Ethnicity of participants
PARTICIPANT A	16 Y/O F	35	10	Caucasian
PARTICIPANT B	18 Y/O M	28	12	Caucasian
PARTICIPANT C	18 Y/O F	30	16	African American
PARTICIPANT D	17 Y/O F	36	18	Caucasian
PARTICIPANT E	17 Y/O F	24	10	Hispanic
PARTICIPANT F	16 Y/O F	28	16	Caucasian
PARTICIPANT G	17 Y/O M	18	11	Caucasian
PARTICIPANT H	16 Y/O F	27	13	Caucasian
PARTICIPANT I	17 Y/O M	32	19	Caucasian
PARTICIPANT J	18 Y/O F	28	21	Hispanic
PARTICIPANT K	17 Y/O M	36	18	Caucasian
PARTICIPANT L	16 Y/O M	24	17	Caucasian
PARTICIPANT M	17 Y/O M	26	16	African American
PARTICIPANT N	18 Y/O F	16	11	Caucasian



PARTICIPANT 0	18 Y/O	31	24	Caucasian
Mean	Mean age =17.1 60% female, 40% male	27.93	15.46	
Standard deviation		5.90	4.22	

All participants participated in the one-time virtual psychoeducation intervention and received weekly phone calls to check-in. Post-intervention, all participants were noted to have improved PSS scores (Mean= 15.46, SD= 4.22) when compared to pre-intervention scores (Mean= 27.93, SD= 5.90) (Appendix J) as noted below (figure 1).



***Figure 1 Bar diagram showing mean difference between pre- and post-intervention perceived stress score.***

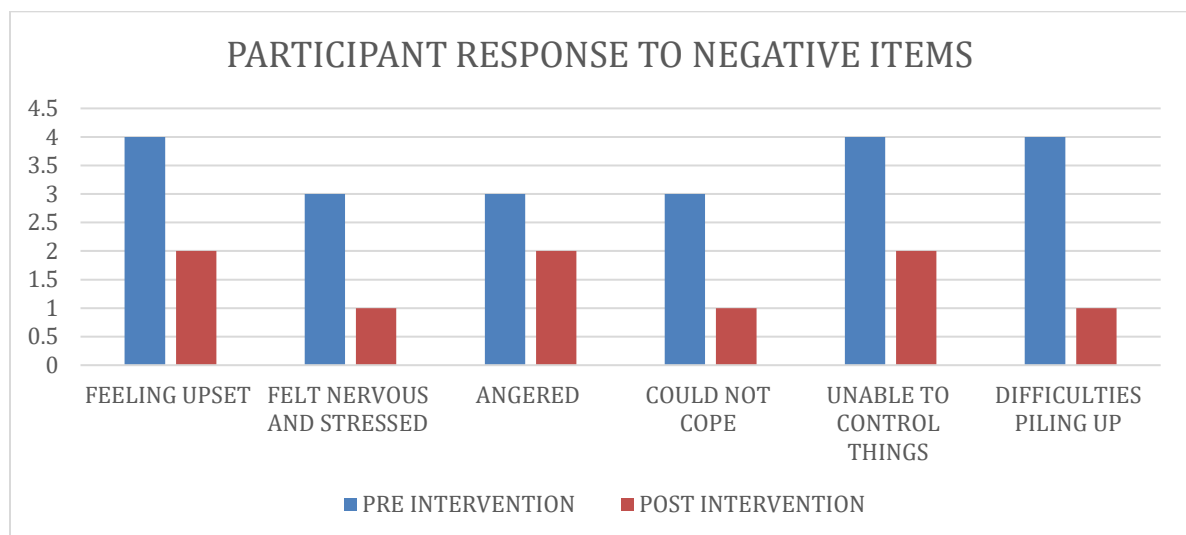
There was a notable improvement in participant's PSS scores after the intervention and daily use of SRT for 4 weeks as evidenced by decreased mean scores post-intervention. The analyses of data shows that the educational intervention improved PSS scores and participants

experienced statistically significant improvement in stress levels (Paired  $t(14) < 0.01$ ), the null hypothesis is rejected (Table 2).

**TABLE 2 Paired sample test**

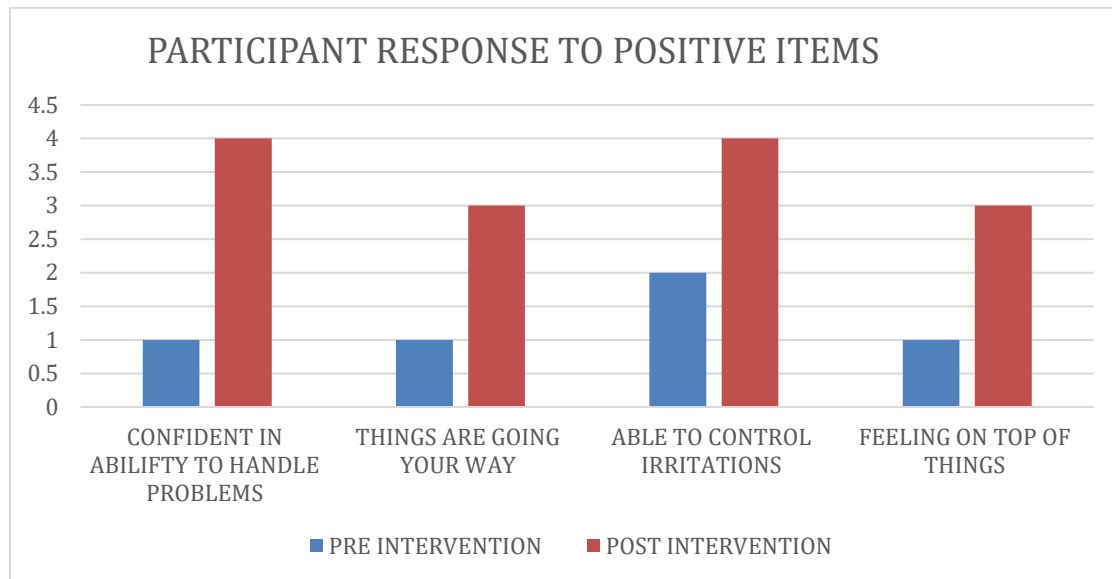
	Mean	Std. deviation	Std. Error Mean	95% confidence interval (lower)	95% confidence interval (upper)	t	df	Sig (2-tailed)
Pair 1 pretest & post test scores.	12.46667	5.47549	1.41376	9.43444	15.49889	8.818	14	<.001

Participants responses to PSS items show a decreased score in negative items and an increased score or improvement in positive items, as shown in the bar diagram above (Figure 2 & 3). For example, in response to **negative** items like feeling upset, nervous, stressed, angered and other negative emotions, participants reported a decrease score post-intervention than they did pre-intervention (Figure 2).



**Figure 2 Bar diagram showing response to negative PSS items pre- and post-intervention data**

In response to **positive** items on the PSS scale-like feeling more confident, able to control irritations, feeling on top of things and others, participants reported an increased score/ improvement in these emotions post-intervention than they did pre-intervention.



**Figure 3** Bar diagram showing response to positive PSS items pre- and post-intervention data

The qualitative data showed that 14 participants (93.33%) self-reported that they found the intervention helpful in stress control and would continue to use SRT daily. One participant quoted, “My anxiety levels have truly gone down.” Another participant quoted “I feel more relaxed, I have also been sleeping better”. Three participants self-reported daily exercising in the last four weeks while the others reported exercising 3-4 times a week. All participants indicated that they were compliant with practicing SRT daily for four weeks. Fourteen participants self-report feeling less stress, less anxious, better sleep, and improved mood post-intervention. These participants reported that they will continue to use SRT as a tool in their daily lives. One participant (6.67%), however reported uncertainty in the program’s usefulness as she was unsure if the intervention was overall helpful for her, even though her pre/post-test scores showed

improved scores and she indicated that she is unsure whether she will continue to practice SRT daily.

### **Discussion**

During a pandemic, this project was conducted during a period of heightened stress, anxiety, uncertainty and fear. Therefore, participants highly benefitted from SRT as a part of their daily routine and self-reported feeling less stressed, less anxious, and less worried. The results show that a one-time psychoeducation intervention and daily use of SRT is helpful and can cause a significant improvement in PSS scores pre-intervention when compared to post-intervention scores. The qualitative data also showed positive results. Participants self-reported feeling less anxious, less stressed and improved sleep. Two participants quoted “My anxiety levels have truly gone down.”, “I feel more relaxed, I have also been sleeping better”. Also, majorities of participants self-reported the program’s usefulness in reducing overall stress and reported that they would continue to use SRT in their daily lives.

Participants particularly liked the simplicity of the SRT, especially that no equipment or tools were needed for daily deep breathing, positive self-talk, and sleep hygiene, and by simply avoiding caffeinated beverages after 3pm, putting away electronic devices, and making sure their bedroom is quiet/dark and relaxing, they could sleep better. The participants were able to exercise at home or outdoors by walking for 30 minutes daily or using a YouTube video for simple exercise routines, no equipment or tools were needed. Both qualitative and quantitative results from this project were positive and show that the use of SRT by adolescents daily is helpful for stress control. This project’s results are promising as it provides adolescents with a safe, and effective tool for stress management and a nonpharmacological treatment for everyday stress and anxieties.

Our project findings are consistent with the studies referenced in the literature review and confirm that stress reduction techniques like deep breathing, sleep hygiene, exercise, positive self-talk, and animal therapy are helpful for stress control (Bistricky et al., 2018; Burkhardt et al., 2018; Delgado et al., 2018; Ratanasiripong et al., 2015; Vohra et al., 2019). This project's result is particularly similar to the study by Burkhardt, et al., 2018, where a one-time psychoeducation intervention was also implemented teaching SRT to participants ages 11-21 years old, by a clinical psychologist and results showed an 86% positive response at one week follow up.

The project's strengths include implementing a stress reduction program at the time of the COVID-19 pandemic, support from the DNP mentor and chair to implement the project and collecting both quantitative and qualitative data to assess the effects of educational intervention. Weaknesses/ limitations include a small sample size (N= 15); thus, conclusions drawn from this study may need caution. It is recommended that future projects include a larger sample size for more generalized findings and if possible, a control group to be used as a benchmark to determine the effects of the intervention.

The COVID 19 pandemic created a huge barrier to implementing this project in person. Since the office is currently closed, the DNP student implemented this project via telemedicine using electronic brochures and zoom meetings. Another barrier was with this age group; adolescents ages 16-18 years old were difficult to engage and were unwilling to complete the PSS survey and were inconsistent with the daily implementation of the taught SRT. In overcoming this barrier gift cards were given to participants who participated and completed the project. Weekly phone calls were made to check in and remind adolescents of the importance of daily implementation for best results.

### **Conclusion**

Stress can be detrimental to health and is a risk factor for physical and mental health disorders. The evidence from the review of the literature supports the effectiveness of various SRT. This DNP project goal was stress control by implementing a SRT psychoeducation in adolescents ages 16-18 years old via telemedicine during a national pandemic. The specific SRT included in the e-brochures include deep breathing, muscle relaxation, exercise, animal therapy, positive self-talk and sleep hygiene implemented as part of a daily routine. These techniques are shown to be effective in stress reduction and reducing anxiety levels. The results were positive and showed that SRT is helpful for stress control. These findings will be presented to staff at the facility and another location the clinic is affiliated with. Implementing this DNP project greatly benefited the participants, the project site, families and the entire community.

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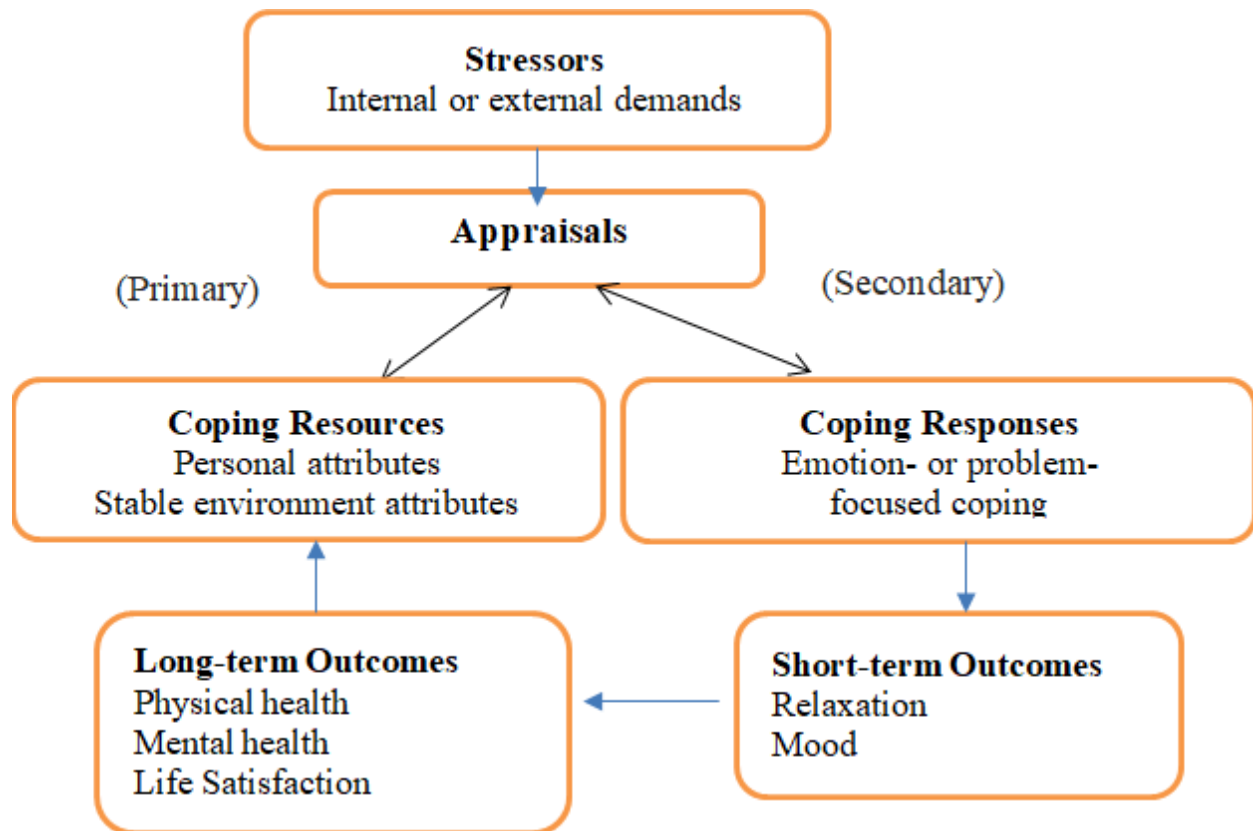


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## Appendix A

**Lazarus and Folkman's transactional model of stress and coping.**



### Appendix B

#### Project Timeline

The project took 8-9 weeks to complete

Task	October	November	December	January	February	March	April
Recruitment of Adolescents ages 16-18. (2 weeks)	X (first 2 weeks)						
Intervention. PSS scores  One time psychoeducation of students on SRT for stress reduction using brochures.  7 WEEK daily implementing. (6 weeks)	X (Last 2 weeks)	X (First 2 weeks)					
Post-intervention PSS scale, qualitative data and Analysis of outcomes (weeks)		X (Last 2 weeks)					
Results presented to project site on benefits of daily SRT.		1 day					

## Appendix C

Table summarizing studies used in the review of the literature, type and level of evidence.

CITATION	TYPE OF EVIDENCE	LEVEL OF EVIDENCE	SUMMARY & FINDINGS
Vohra, S., Punja, S., Sibinga, E., Baydala, L., Wikman, E., Singhal, A., ... & Van Vliet, K. J. (2019). Mindfulness-based stress reduction for mental health in youth: a cluster randomized controlled trial. <i>Child and Adolescent Mental Health</i> , 24(1), 29-35.	Randomized control trial.	Level II	Participants were randomized to MBSR group or control, and interventions were implemented. Results showed effectiveness of MBSR for improving coping skills, reducing levels of anxiety/depression/ level of perceived stress and somatization. Those who participated in the MBSR program had a significantly less stay in the residential program compared to those in the control group.
Delgado, C., Toukonen, M., & Wheeler, C. (2018). Effect of canine play interventions as a stress reduction strategy in college students. <i>Nurse educator</i> , 43(3), 149-153.	Quasi experimental Study.	Level III	This study assesses the effectiveness of a stress reduction technique, animal-assisted therapy on reducing psychological and physiological stress levels. The findings from the study shows that a stress-reduction technique, particularly animal therapy in college students can help promote mental health, improve mood, and overall mental health.

<p>Bistricky, S. L., Harper, K. L., Roberts, C. M., Cook, D. M., Schield, S. L., Bui, J., &amp; Short, M. B. (2018). Understanding and Promoting Stress Management Practices Among College Students Through an Integrated Health Behavior Model. <i>American Journal of Health Education</i>, 49(1), 12-27.</p>	Qualitative study	Level VI	<p>233 college students in a school setting, completed an online questionnaire survey assessing health beliefs, past and intended future use of SRTs, the results demonstrate the importance of health behavior model (HBM), in explaining stress reduction techniques SRT behaviors, to college students; the study focuses on intended changes in SRT use, given its specific relevance to improving public health.</p> <p>Participants reported an intention to use all SRTs more frequently, including the</p> <p>Intention to double the use of SRT could have both preventative and therapeutic effects.</p>
<p>Burkhart, K., Mason, E., &amp; Lazebnik, R. (2018). Stress management intervention: A pilot evaluation in an urban adolescent medicine clinic. <i>Clinical pediatrics</i>, 57(6), 700-705</p>	Case control	Level IV	<p>The study attempts to test the effectiveness of a one-time psychoeducation on the effects of stress on the body, implemented in an outpatient clinic, on the participant's knowledge to practice stress management strategies outside the clinic and overall perceive stress of participants. The results showed that 28 participants reported that the psychoeducation intervention was helpful and that they have the knowledge to practice relaxation techniques at home.</p>

Ratanasiripong, P., Park, J. F., Ratanasiripong, N., & Kathalae, D. (2015). Stress and anxiety management in nursing students: Biofeedback and mindfulness meditation. <i>Journal of Nursing Education</i> , 54(9), 520-524.	Randomized control trail	Level II	The study attempts to test effectiveness of SRT on nursing students in a school setting. Students were randomly assigned to 3 groups of biofeedback, mindfulness meditation or a control group; Results showed that biofeedback was most effective in the management of anxiety and stress levels in students. Mindfulness meditation was also effective and decreased stress and anxiety levels. The study recommends and encourages the implementation of these techniques into daily lives of students.
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## **Appendix D**

### **Rating System by Melnyk et al, 2011**

Level I: Evidence from a systematic review of all-relevant randomized controlled trials (RCT's), or evidence-based clinical practice guidelines based on systematic reviews of RCT's

Level II: Evidence obtained from well-designed Randomized Controlled Trials (RCT)

Level III: Evidence obtained from well-designed controlled trials without randomization, quasi-experimental

Level IV: Evidence from well-designed case-control and cohort studies

Level V: Evidence from systematic reviews of descriptive and qualitative studies

Level VI: Evidence from a single descriptive or qualitative study

Level VII: Evidence from the opinion of authorities and/or reports of expert committees

**Appendix E****COST AND BENEFIT ANALYSIS**

a) Preparation of e-brochures by educator PMHNP-BC

$$2 \text{ hours} \times \$50 \times 1 \text{ educator PMHNP-BC} = \$100$$

b) Education and Training:

$$1\text{-hour} \times \$50 \times 1 \text{ educator PMHNP-BC} = \$50$$

c) Gift card incentives for adolescents who participate

$$\$10 \times 15 \text{ adolescents} = \$150$$

d) Data collection - Assessment of data pretest and post-test

$$2 \text{ hours} \times \$50 \times 1 \text{ educator PMHNP-BC} = \$100$$

e) There will be no capital investment for this project.

**Total expenses = 400**

Estimates cost savings= \$200 savings from self-creation of brochures instead of professionally made brochures.



## Appendix F

## IRB APPROVAL

**UMassAmherst**

Human Research Protection Office

Mass Venture Center  
100 Venture Way, Suite 116  
Hadley, MA 01035  
Telephone: 413-545-3428

**Memorandum – Not Human Subjects Research Determination****Date:** September 30, 2020**To:** Gold Okoeka, Nursing**Project Title:** *Psychoeducation Intervention for Stress Management in Adolescents***HRPO Determination Number:** 20-212

The Human Research Protection Office (HRPO) has evaluated the above named project and has made the following determination based on the information provided to our office:

- ☐ The proposed project does not involve research that obtains information about living individuals [45 CFR 46.102(f)].
- ☐ The proposed project does not involve intervention or interaction with individuals OR does not use identifiable private information [45 CFR 46.102(f)(1), (2)].
- ☒ The proposed project does not meet the definition of human subject research under federal regulations [45 CFR 46.102(d)].

**Submission of an Application to UMass Amherst IRB is not required.**

Note: This determination applies only to the activities described in the submission. If there are changes to the activities described in this submission, please submit a new determination form to the HRPO prior to initiating any changes. ***Researchers should NOT include contact information for the UMass Amherst IRB on any project materials.***

A project determined as “Not Human Subjects Research,” must still be conducted ethically. The UMass Amherst HRPO strongly expects project personnel to:

- treat participants with respect at all times
- ensure project participation is voluntary and confidentiality is maintained (when applicable)
- minimize any risks associated with participation in the project
- conduct the project in compliance with all applicable federal, state, and local regulations as well as UMass Amherst Policies and procedures which may include obtaining approval of your activities from other institutions or entities.

Please do not hesitate to call us at 413-545-3428 or email [humansubjects@ora.umass.edu](mailto:humansubjects@ora.umass.edu) if you have any questions.



Iris L. Jenkins, Assistant Director  
Human Research Protection Office

## Appendix G


### E-brochures used for educational intervention.

#### Impacts of stress

Stress affects everyone. We all feel stress from time to time, since this is how our body responds to demands or changes. You could experience stress related to schoolwork, relationships, making friends, and so many others. Long-term undermanaged stress is bad for your physical and mental health, causing headaches, anxiety, poor sleep, irritability, and others. These tips below will help you manage stress by empowering you with healthy stress reduction techniques SRTs.

#### TIPS TO PRACTICE DAILY FOR STRESS MANAGEMENT

1. Exercise 30-minutes every day to promote mood, improve health and relax muscles. Find something you enjoy like walking, running or yoga and stick with it.
2. Use relaxation techniques like deep- breathing, mediation and muscle relaxation. Schedule 15-20 minutes daily to practice these techniques for stress management.
3. Try to get at least 8-9 hours of sleep each night. If struggling with insomnia try improving sleep hygiene by avoiding caffeinated beverages after 3pm, avoid electronic devices, and making sure your bedroom is quiet/dark and relaxing.
4. If all the above fails to promote sleep hygiene, try over the counter melatonin capsules 3mg 1-2 hours before bedtime.
5. Practice positive self-talk daily. This will help calm down stress levels and shift negative thoughts to more positive ones. Say things like “I can do this!”, “everything will be OK”. Avoid saying things like “I am stupid” or “I will never get this right”.
6. Spending time with a pet is relaxing and cause the release of endorphins to help you feel good. If you have a pet, spend quality time with them daily. Pets also help to reduce feelings of loneliness.

healthy Self-Talk 	
THIS	NOT THAT
✓ Whoops. I made a mistake.	✗ I'm so dumb.
✓ I like me.	✗ No one likes me.
✓ I did something bad.	✗ I'm a bad person.
✓ This is really hard, but I'm going to keep trying.	✗ I give up. I'll never be able to do this.
✓ I haven't figured it out...yet.	✗ I never get anything right.
✓ I am enough. And worthy, too.	✗ I'm not good enough.

## Appendix H

## COMPLETED PSS PRE-TEST PARTICIPANT A

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## Perceived Stress Scale

The questions in this scale ask you about your feelings and thoughts **during the last month**. In each case, you will be asked to indicate by circling *how often* you felt or thought a certain way.

Name \_\_\_\_\_ Participant A Date 11/7/2020  
 Age 16 Gender (*Circle*): **M** **F** Other \_\_\_\_\_

**0 = Never    1 = Almost Never    2 = Sometimes    3 = Fairly Often    4 = Very Often**

1. In the last month, how often have you been upset because of something that happened unexpectedly? ..... **0**    **1**    **2**    **3** <sup>x</sup>    **4**
2. In the last month, how often have you felt that you were unable to control the important things in your life? ..... **0**    **1**    **2**    **3** <sup>x</sup>    **4**
3. In the last month, how often have you felt nervous and "stressed"? ..... **0**    **1**    **2**    **3**    **4** <sup>x</sup>
4. In the last month, how often have you felt confident about your ability to handle your personal problems? ..... **0**    **1** <sup>x</sup>    **2**    **3**    **4** <sup>3</sup>
5. In the last month, how often have you felt that things were going your way?..... **0** <sup>x</sup>    **1**    **2**    **3**    **4** <sup>4</sup>
6. In the last month, how often have you found that you could not cope with all the things that you had to do? ..... **0**    **1**    **2**    **3**    **4** <sup>x</sup>
7. In the last month, how often have you been able to control irritations in your life? ..... **0**    **1**    **2** <sup>x</sup>    **3**    **4** <sup>2</sup>
8. In the last month, how often have you felt that you were on top of things?.. **0** <sup>x</sup>    **1**    **2**    **3**    **4** <sup>4</sup>
9. In the last month, how often have you been angered because of things that were outside of your control?..... **0**    **1**    **2**    **3**    **4** <sup>x</sup>
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? ..... **0**    **1**    **2**    **3**    **4** <sup>x</sup>

Please feel free to use the *Perceived Stress Scale* for your research.

**Mind Garden, Inc.**

info@mindgarden.com

www.mindgarden.com

## References

The PSS Scale is reprinted with permission of the American Sociological Association, from Cohen, S., Kamarck, T., and Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24, 386-396.  
 Cohen, S. and Williamson, G. Perceived Stress in a Probability Sample of the United States. Spacapan, S. and Oskamp, S. (Eds.) *The Social Psychology of Health*. Newbury Park, CA: Sage, 1988.

TOTAL PSS SCORE 35

## Appendix I

## COMPLETED PSS POST-TEST PARTICIPANT A

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## Perceived Stress Scale

The questions in this scale ask you about your feelings and thoughts **during the last month**. In each case, you will be asked to indicate by circling *how often* you felt or thought a certain way.

Name \_\_\_\_\_ Participant A Date 12/4/2020  
 Age <sup>16</sup> \_\_\_\_\_ Gender (Circle): **M** **F**<sup>x</sup> Other \_\_\_\_\_

**0 = Never    1 = Almost Never    2 = Sometimes    3 = Fairly Often    4 = Very Often**

1. In the last month, how often have you been upset because of something that happened unexpectedly? ..... **0**    **1**    **2**<sup>x</sup>    **3**    **4**
2. In the last month, how often have you felt that you were unable to control the important things in your life? ..... **0**    **1**<sup>x</sup>    **2**    **3**    **4**
3. In the last month, how often have you felt nervous and "stressed"? ..... **0**    **1**<sup>x</sup>    **2**    **3**    **4**
4. In the last month, how often have you felt confident about your ability to handle your personal problems? ..... **0**    **1**    **2**    **3**<sup>x</sup>    **4** <sup>1</sup>
5. In the last month, how often have you felt that things were going your way? ..... **0**    **1**    **2**    **3**<sup>x</sup>    **4** <sup>1</sup>
6. In the last month, how often have you found that you could not cope with all the things that you had to do? ..... **0**    **1**<sup>x</sup>    **2**    **3**    **4**
7. In the last month, how often have you been able to control irritations in your life? ..... **0**    **1**    **2**    **3**<sup>x</sup>    **4** <sup>1</sup>
8. In the last month, how often have you felt that you were on top of things?.. **0**    **1**    **2**    **3**<sup>x</sup>    **4** <sup>1</sup>
9. In the last month, how often have you been angered because of things that were outside of your control? ..... **0**    **1**<sup>x</sup>    **2**    **3**    **4**
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? ..... **0**<sup>x</sup>    **1**    **2**    **3**    **4**

Please feel free to use the *Perceived Stress Scale* for your research.

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info@mindgarden.com  
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## References

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 Cohen, S. and Williamson, G. Perceived Stress in a Probability Sample of the United States. Spacapan, S. and Oskamp, S. (Eds.) *The Social Psychology of Health*. Newbury Park, CA: Sage, 1988.

TOTAL PSS SCORE 10

**Appendix J****QUANTITATIVE DATA FOR PARTICIPANTS (N = 15)**

PARTICIPANTS	AGE / GENDER	PRETEST SCORES	POST- TEST SCORES	Race/ Ethnicity of participants
PARTICIPANT A	16 Y/O F	35	10	Caucasian
PARTICIPANT B	18 Y/O M	28	12	Caucasian
PARTICIPANT C	18 Y/O F	30	16	African American
PARTICIPANT D	17 Y/O F	36	18	Caucasian
PARTICIPANT E	17 Y/O F	24	10	Hispanic
PARTICIPANT F	16 Y/O F	28	16	Caucasian
PARTICIPANT G	17 Y/O M	18	11	Caucasian
PARTICIPANT H	16 Y/O F	27	13	Caucasian
PARTICIPANT I	17 Y/O M	32	19	Caucasian
PARTICIPANT J	18 Y/O F	28	21	Hispanic
PARTICIPANT K	17 Y/O M	36	18	Caucasian
PARTICIPANT L	16 Y/O M	24	17	Caucasian
PARTICIPANT M	17 Y/O M	26	16	African American
PARTICIPANT N	18 Y/O F	16	11	Caucasian
PARTICIPANT O	18 Y/O	31	24	Caucasian
Mean	Mean age =17.1 60% female, 40% male	27.93	15.46	
Standard deviation		5.90	4.22	

## Appendix K

### PERMISSION FOR USE OF PSS SCALE

#### PERMISSION FOR USE OF THE PERCEIVED STRESS SCALE

I apologize for this automated reply. Thank you for your interest in our work.

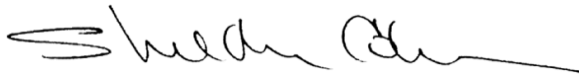
**PERMISSION FOR USE BY STUDENTS AND NONPROFIT ORGANIZATIONS:** If you are a student, a teacher, or are otherwise using the Perceived Stress Scale (PSS) without making a profit on its use, you have my permission to use the PSS in your work. Note that this is the only approval letter you will get. I will not be sending a follow-up letter or email specifically authorizing you (by name) to use the scale.

**PERMISSION "FOR PROFIT" USE:** If you wish to use the PSS for a purpose other than teaching or not for profit research, or you plan on charging clients for use of the scale, you will need to see the next page: "Instructions for permission for profit related use of the Perceived Stress Scale".

**QUESTIONS ABOUT THE SCALE:** Information concerning the PSS can be found at <https://www.cmu.edu/dietrich/psychology/stress-immunity-disease-lab/index.html> (click on scales on the front page). Questions about reliability, validity, norms, and other aspects of psychometric properties can be answered there. The website also contains information about administration and scoring procedures for the scales. Please do not ask for a manual. There is no manual. Read the articles on the website for the information that you need.

**TRANSLATIONS:** The website (see URL above) also includes copies of translations of the PSS into multiple languages. These translations were done *by other investigators*, not by our lab, and we take no responsibility for their psychometric properties. If you translate the scale and would like to have the translation posted on our website, please send us a copy of the scale with information regarding its validation, and references to relevant publications. If resources are available to us, we will do our best to post it so others may access it.

Good luck with your work.



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